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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,439	12/28/2001	Eleanor P. Rabadam	42P12399	8983

8791 7590 12/04/2003

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EXAMINER

LEE, EUGENE

ART UNIT PAPER NUMBER

2815

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/039,439	Applicant(s) RABADAM ET AL.	
	Examiner Eugene Lee	Art Unit 2815	<i>ASW</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 6, 12, 13, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey et al. 6,476,486 B1 in view of Mart et al. 5,563,838. Humphrey discloses (see, for example, Fig. 8) an integrated circuit mounting package comprising an integrated circuit die 20 and electronic device (voltage regulator circuit) 37. The electronic device is connected to the integrated circuit die by way of the contact pad 21. In column 2, lines 34-43, Humphrey discloses the electronic device may be a voltage regulator. Humphrey does not specifically state the integrated circuit die including a memory array. However, it was extremely well known in the art at the time of invention that integrated circuit dies include memory arrays. Mart teaches (see, for example, column 1, lines 28-39) that integrated circuit chips come in a variety of forms, i.e. DRAM, SRAM, ROM, gate arrays, etc., which are all types of memory chips. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have a memory array in Humphrey's invention in order to form a memory chip device, and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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3. Claims 2 thru 4, 7 thru 10, and 14 thru 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey et al. '486 B1 in view of Mart et al. 5,563,838 as applied to claims 1, 5, 6, 12, 13, 18 and 19, and further in view of Spielberger 6,005,778. Humphrey in view of Mart does not disclose the passive component being mounted to the integrated circuit die with an epoxy material. However, Spielberger states (see, for example, column 4, lines 40-42 and column 4, lines 12-17) that a chip is bonded by a conductive or nonconductive adhesive, and that epoxies are an example of adhesives. It would have been obvious to one of ordinary skill in the art at the time of invention to use an epoxy material in Humphrey in view of Mart in order to stabilize the passive component on the integrated circuit die.

Regarding claim 3, Humphrey in view of Mart in view of Spielberger discloses the claimed invention except for the epoxy material between the passive component and the integrated circuit die being less than about 0.050 millimeters in thickness. However, it was well known in the art at the time of invention to use this thickness in order to reliably attach one semiconductor component to another component in a semiconductor device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to use an epoxy material being less than about 0.050 millimeters in thickness, in order to reliably attach the chip to the voltage regulator, and since it has been held that discovering an optimum value of a result effective value involves only routine skill in the art. In re Boesch, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 8-10, Humphrey in view of Mart does not disclose wires to connect the integrated circuit or passive component to the substrate. However, Spielberger discloses (see, for example, left side of Figure 5) wires (first wire bond) 28a that connect the integrated circuit

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40b to substrate 14b. For claims 9 and 10, Spielberger discloses (see, for example, right side of Figure 5) other wires (second wire bond) 28a that connect the passive component to the substrate. It would have been obvious to one of ordinary skill in the art at the time of invention to include these wires in Humphrey in view of Mart in order to make a reliable connection between the integrated circuit or passive component to the substrate.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey et al. '486 B1 in view of Mart et al. 5,563,838 as applied to claims 1, 5, 6, 12, 13, 18 and 19, and further in view of Javanifard et al. '033 B1. Humphrey in view of Mart does not disclose the integrated circuit die including a flash memory array. However, it was very well known in the art that flash memory arrays were one of many types of memory arrays utilized in memory chips. Javanifard discloses (see, for example, column 6, lines 9-15) a memory circuit device comprising a flash memory. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a flash memory in order to utilize a common memory array that capably reads, writes, and stores data in a semiconductor device.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey et al. '486 B1 in view of Mart et al. 5,563,838 as applied to claims 1, 5, 6, 12, 13, 18 and 19, and further in view of Sundstrom '177. Humphrey in view of Mart does not disclose a wire bond to electrically couple at least one passive component and the integrated circuit. However, it was extremely well known in the art at the time of invention to use wires to connect components of a semiconductor device. Sundstrom teaches (see, for example, FIG. 3) a semiconductor device

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comprising a passive device 12 and an underlying die 10. A bonding wire 28 couples the passive device to the die 10. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use a bonding wire in order to reliably couple the voltage regulator and chip together.

Response to Arguments

6. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee
November 29, 2003


GEORGE ECKERT
PRIMARY EXAMINER